DEPARTMENT OF THE INTERIOR – AVIATION MANAGEMENT

AIRCRAFT RENTAL AGREEMENT PROVISIONS: SUPPLEMENT NO. 1

SPECIAL USE - HELICOPTER CLASS A, B & C
EXTERNAL LOAD INCLUDING LONG LINE

Definitions

Class A rotorcraft-load combination means one in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

Class B rotorcraft-load combination means one in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

Class C rotorcraft-load combination means one in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation.

Long Line: Any combination of load and line, attached to the cargo hook of the aircraft for the purpose of carrying an external load, greater than 50 feet in length.

Remote Hook: An electrically operated cargo hook attached to the lower end of a line with the upper end of the line attached to an aircraft cargo hook and controlled from the pilot's position.

Vertical Reference: A term used to describe the pilot technique of controlling the aircraft while looking down vertically at the load attached to the cargo hook. Sling loads that have a combined length greater than 50 feet will require a Vertical Reference Longline endorsement. Pilots will be required to demonstrate their ability during an agency evaluation flight. Pilots shall provide written evidence of qualification in accordance with 14 CFR 133 to transport Class A, B, or C external loads as appropriate.

B8.1.1 CERTIFICATION

B8.1.1.1 In lieu of the certification requirement of the basic Aircraft Rental Agreement (B1.2.1.1) when the helicopter is used for external load operations only, the vendor is only required to be certificated under 14 CFR Part 133, Rotorcraft External Load Operations. This certificate shall include Class A, B, or C as appropriate.

B8.1.2 FLIGHT OPERATIONS

B8.1.2.1 A remote hook is not always required for long line external load operations. Spring guarded hooks or shackles can be used on the lower end of a line. Flying with non-weighted line is not allowed. All hooks and shackles must be safetied when attached to a line, either with a self-locking nut, a safety pin or safety wire.

B8.1.2.2 Helicopters configured from former military aircraft, which have FAA Type Certificates based upon military operation in lieu of a manufacturer's type certificate, must have all applicable Time Compliance Technical Orders (TCTO's) or Navy/Army Service Bulletins accomplished. This includes any directives referring to later models of the same type that were issued after the earlier models had left the military inventory. If FAA approvals establish more restrictive limits, they shall prevail.

B8.1.2.3 Class B external loads shall be conducted with counterwound, rotation resistant wire, or synthetic line. See further requirements in this supplement.

B8.1.3 PERSONNEL REQUIREMENTS

B8.1.3.1 The precision placement of externally carried cargo is the operational requirement of this supplement. Pilots shall be required to place cargo precisely where requested regardless of the cable length while operating within the helicopter's capability. Pilots shall provide written evidence of qualification to transport Class A, B, or C external loads as appropriate. Pilots may be required to demonstrate their ability during an agency evaluation flight.

B8.1.3.1.1 A long line pilot endorsement shall require a flight evaluation utilizing a cable length greater than 50 feet.

B8.1.3.2 Pilots shall have recorded minimum flying time as pilot-in-command as follows:

B8.1.3.2.1 200 hours experience operating helicopters in mountainous terrain as identified in 14 CFR 95 Subpart B – Designated Mountainous Area. Operating includes, maneuvering and numerous takeoffs and landings to ridgelines, pinnacles and confined areas.

B8.1.3.2.2 10 hours Mountainous Terrain in Make and Model

B8.1.3.3 Personal Protective Equipment (PPE). The following items shall be worn by the pilot, be operable, and maintained in good repair:

B8.1.3.3.1 An aviator's flight helmet, consisting of a one-piece hard shell made of polycarbonate, Kevlar, carbon fiber, or fiberglass, must cover the top, sides (including the temple area and to below the ears), and the rear of the head. The helmet shall be equipped with a chinstrap and appropriately adjusted for proper fit. Flight helmets for helicopter usage must conform to a national certifying agency standard, such as DOT, Snell-95, SFI, or an appropriate military standard, and be compatible with required avionics (see section B8.1.5.2). "Shorty" (David Clark style) helmets are not approved. Flight helmets currently meeting this requirement are the SPH-3, SPH-4, SPH-5, SPH-4B, SPH-8, HGU-56 and HGU-84. Helmets designed for use in fixed wing aircraft do not provide adequate protection for helicopter occupants and are not approved for helicopter use.

B8.1.3.3.2 Vendor personnel, while flying, shall wear a long-sleeved shirt and trousers (or long-sleeved flight suit) made of fire-resistant polyamide or aramid material, leather boots, and leather, polyamide, or aramid gloves. The long-sleeved shirt shall overlap the gloves, and the pants shall overlap the boots by at least 2 inches. Personnel shall not wear clothing made of non fire-resistant synthetic material under the fire-resistant clothing described above.

B8.1.4 EQUIPMENT REQUIREMENTS

B8.1.4.1 A first aid kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.1.4.2 A survival kit containing items specified in Exhibit 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.1.4.3 Class A External Load - Cargo racks, when provided, shall be capable of accommodating 58-inch long shovels, rakes, and other tools. Cargo racks shall be at least two and one-half inches deep, meeting construction methods and procedures prescribed in Advisory Circular 43.13.1A and 43.13-2A.

B8.1.4.4 Class B or C External Load – One cargo hook that may be loaded and locked in a single motion with one hand, and is rated at the maximum lifting capacity of the aircraft.

B8.1.4.4.1 Helicopters for which an automatic locking cargo hook is not available are exempt from this requirement provided the cargo hook complies with the FAR applicable to the model of aircraft.

B8.1.4.4.2 The inspection and maintenance of the cargo hook shall be accomplished in accordance with the manufacturers operating and maintenance instructions. If manufacturers' operating and maintenance instructions are not published, the cargo hook and associated systems shall be completely disassembled, inspected, lubricated if required, and subjected to an operations check in all operating modes within the preceding 24 months.

B8.1.4.5 All wire rope assemblies and hardware, with appropriate placards, shall have a minimum breaking strength of 3.75 times the working load and/or synthetic rope, with appropriate placards, meeting the following requirements.

B8.1.4.5.1 **Synthetic Rope Longline Requirements**

Diameter. Minimum Rope Diameter shall be ½ inch.

Material Type. Helicopter synthetic longlines shall be constructed from the HMWPE or HMPE (High Molecular Weight Polyethylene) family of rope fibers including brand names such as Spectra by Allied Signal or fibers with similar

properties. Spectra has very high strength, high flex fatigue life, very low stretch (less than 1 percent elongation at 30 percent of break strength), excellent chemical resistance, and less than 1 percent water absorption. Another high strength, high performance rope fiber is Vectran produced by Hoechst-Celanese. Rope brand names made from these types of fibers include Plasma 12, Spectron II, and Spectron 12 or AmSteel. Ropes from these fibers are usually twelve-strand or double-braid construction.

Working or Rated Load. The working or rated load of a rope is the maximum static load that will be lifted by the rope. Working loads are based on a percentage of the approximate breaking or ultimate strength of the rope when new and unused. The working load shall be appropriate to the lifting capability of the helicopter. For reference, lifting capability for each category of helicopter is as follows:

Type 1: 8,000 lb to 30,000 lb or greater
Type 2: 1,600 lb to 4,500 lb
Type 3: 750 lb to 1,600 lb

Factor of Safety. A factor of safety of 7 shall be used for helicopter synthetic longlines. Therefore, all ropes shall have an ultimate strength (minimum breaking strength) of seven times the rated or working load. For example, if a Type II helicopter line will have a working load of 4,500 pounds, the rope must have a minimum breaking strength when new of at least 31,500 pounds. Rope diameters will vary depending on strength and type of rope.

Knots and Splices. No knots are permitted in the synthetic longline. Knots can decrease rope strength by as much as 50 percent. Splices may be used in the assembly of the longline, but no mid-line splicing repairs may be done. Resplicing at the end of the line is permitted only if the rope is in good condition and the new splice is done per the manufacturer's recommended splicing practices. Splices should always follow the manufacturer-recommended splicing practices.

Protective Coatings and Covers. Rope manufacturers offer protective coatings such as aromatic urethane coatings, which help with abrasion resistance and provide some UV protection. The coating appears as a dye on the rope and does not change the rope dimension. Heavy plastic coatings are not recommended because the inside of the rope cannot be inspected. Some companies also sell "sleeve" covers that attach with Velcro. These are easily removable for rope inspection and provide the greatest UV and debris protection. It is recommended but not required that synthetic longlines have the UV coating and/or the removable covers to help protect the lines. Consult rope manufacturers for acceptable coating methods.

Manufacturer's recommended maintenance and inspection procedures shall be complied with.

B8.1.4.6 The aircraft shall be equipped with a convex mirror for observation of the sling load by the pilot. For aircraft equipped and modified for vertical reference external load operation (i.e., door gauges, modified seat, alternate cargo hook release positions, bubble window, etc.) or for helicopters such as the MD Model 500 where direct vertical reference is possible the convex mirror is not required.

B8.1.4.7 Additional requirements for external load when utilizing a remote hook:

B8.1.4.7.1 One electrically activated remote cargo hook that automatically closes and resets the release mechanism after use and is rated at the maximum lifting capacity of the helicopter. The remote hook shall be protected by a metal ring or cage that does not interfere with the use or function of the hook.

B8.1.4.7.2 Electric cables shall be protected from pinching by hooks or shackles, and damage caused by stretching of the line. The electrical wire shall be long enough at the aircraft cargo hook end to prevent a swinging load from unplugging the electrical connector.

B8.1.4.7.3 When a remote hook is ordered, the aircraft must be wired with a switch available to the pilot to release the remote hook electrically.

B8.1.5 AVIONICS REQUIREMENTS (NOT REQUIRED FOR RESTRICTED CATEGORY AIRCRAFT)

B8.1.5.1 An InterCommunication System (ICS) shall be provided for the pilot, observer, and all required aft positions. ICS audio shall mix with, but not mute, selected receiver audio. ICS sidetone audio shall be provided for the earphones corresponding with the microphone in use. The ICS audio output shall be free of distortion, hum, noise, and crosstalk, and shall be amplified sufficiently to facilitate ease of use in a noisy cockpit/cabin environment.

B8.1.5.2 Microphones, PTTs, & Jacks

B8.1.5.2.1 The system shall be designed for operation with 600 ohm earphones and carbon-equivalent, noise-canceling boom type microphones (Gentex electret type Model 5060-2, military dynamic type M-87/AIC with CE-100 TR preamplifier, or equivalent). The pilot position only may be configured for low impedance (dynamic) operation.

B8.1.5.2.2 Push-to-talk (**PTT**) operation: separate PTT switches shall be provided for radio transmitter and ICS microphone operation at the pilot and observer positions. ICS PTT switches shall be provided for the other ICS-equipped positions. The pilot's PTT switches shall be mounted on the cyclic control. The PTT switch(es) for all other positions shall be mounted on the cord to the earphone/microphone connector.

B8.1.5.2.3 All earphone/microphone jacks in the aircraft (except the pilot's) shall be U-92A/U (single/female) type, which shall accept U-174/U type plugs.

B8.1.6 MAINTENANCE REQUIREMENTS

B8.1.6.1 **Weight & Balance.** The aircraft's required weight and balance data shall be determined by actual weighing of the aircraft and following any major repair or major alteration or change to the equipment list, which significantly affects the center of gravity of the aircraft.

B8.1.6.1.1 All weighing of aircraft shall be performed on scales that have been certified as accurate within preceding 24 calendar months. The certifying agency may be any accredited weights and measures laboratory.

B8.1.6.1.2 A list of equipment installed in the aircraft at the time of weighing must be compiled. The equipment list shall include the name of each item installed. Items which may be easily removed or installed for aircraft configuration changes (seats, doors, radios, cargo hook, baskets, special mission equipment, survival kit, etc.) shall also be listed including the name, the weight and arm of each item. Each page of the equipment list must identify the specific aircraft by at least serial number or registration number of the aircraft. Each page of the equipment list shall be dated indicating the last date of weighing or computation. The weight and balance must be revised each time new equipment is installed or old equipment is removed. Weight and balance procedures under 14 CFR 135.23(b) and 135.185 are acceptable.

B8.1.6.2 **Time Between Overhaul and Life Limited Parts.**

B8.1.6.2.1 All components, including engines, shall be replaced upon reaching the factory-recommended TBO or FAA-approved extension. Life limited parts shall be replaced at the specified time in service hours or cycles.

B8.1.6.2.2 Aircraft operated with components or accessories on approved TBO extension programs are acceptable provided: (1) the Vendor is the holder of the approved extension authorization (not the owner if the aircraft is leased), and (2) the Vendor operates in accordance with the extension authorization.

B8.1.6.2.3 The Vendor shall supply, at the time of the initial agency inspection, a list of all items installed on the aircraft that are required to be overhauled or replaced on a specified time basis. This list shall include the components name, part number, serial number, total time, service life (or inspection/overhaul time interval), and time and date when component was overhauled, replaced, or inspected.

B8.1.6.3 **Turbine Engine Power Assurance Check**. The first day of operation and no more than each ten hours of operation thereafter, a power assurance check shall be performed. The power assurance check shall be accomplished in accordance with the helicopter flight manual (pilots operating handbook) or approved company performance monitoring program. The results shall be recorded and kept in the helicopter or at the designated base. Engines with power output below minimum approved limits shall be removed from use until the cause of the low power condition is corrected.

EXHIBIT 4

FIRST AID & SURVIVAL KITS

These are minimum required items for Special Use Activities in the United States and U.S. Possessions. Additional survival kit items are required for flight activities conducted in Canada and Alaska.

Minimum First Aid Kit Items

Each kit must be in a dust-proof and moisture-proof container.
The kit must be readily accessible to the pilot and passengers.

Item	Passenger Seats 0-9	Passenger Seats 10-50
Adhesive bandage strips, (3"long)	8	16
Antiseptic or alcohol wipes (pkts)	10	20
Bandage compresses, 4"	2	4
Triangular bandage, 40" (sling)	2	4
Roller bandage, 4"x 5 yds (gauze)	2	4
Adhesive tape, 1"x 5 yds (std roll)	1	2
Bandage scissors	1	1
Body Fluids Barrier kit:	1	1
2 - pair latex gloves		
1 - face shield		
1 – mouth-to-mouth barrier		
1 – protective gown		
2 – antiseptic towelettes		
1 – biohazard disposable bag		
NOTE: Splints are recommended if space permits.		

MINIMUM AIRCRFT SURVIVAL KIT ITEMS

These are minimum required items for special use activities in the conterminous United States (including Alaska) and U.S. possessions.

Fire Starter (can be two boxes of matches in a waterproof container)
One knife
Signal Flares (six each) or One 72-Hour Laser Type Flare
Candles
Collapsible water bag
Space Blanket (one per occupant)
Magnesium fire starter
Signal Mirror
Food (two days emergency rations per occupant)
Water purification tablets
Whistle
Nylon rope or parachute cord (50 feet)

These are additional items for the contiguous U.S. and U.S. Possessions:

Water (one quart per occupant required when operating over areas without adequate drinking water)

These are additional items for Alaska only:

Rations for each occupant sufficient to sustain life for one week
One axe or hatchet
One first aid kit
One mosquito headnet for each occupant
Insect repellant
An assortment of tackle such as hooks, flies, lines, sinkers, etc.

OCTOBER 15 TO APRIL 1

One pair of snowshoes
One sleeping bag
One wool blanket or equivalent for each occupant over four years of age

Note: Operators of multiengine aircraft licensed to carry more than 15 passengers need carry only the food, mosquito nets, and signaling equipment at all times other than the period from October 15 to April 1 of each year, when two sleeping bags and one blanket for every two passengers shall also be carried. All of the above emergency rations and equipment requirements are the minimum requirements under current law.